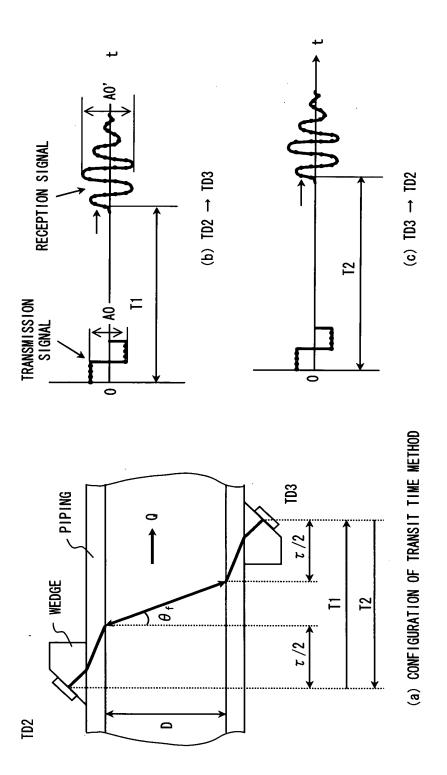


F I G. 1



F I G. 2

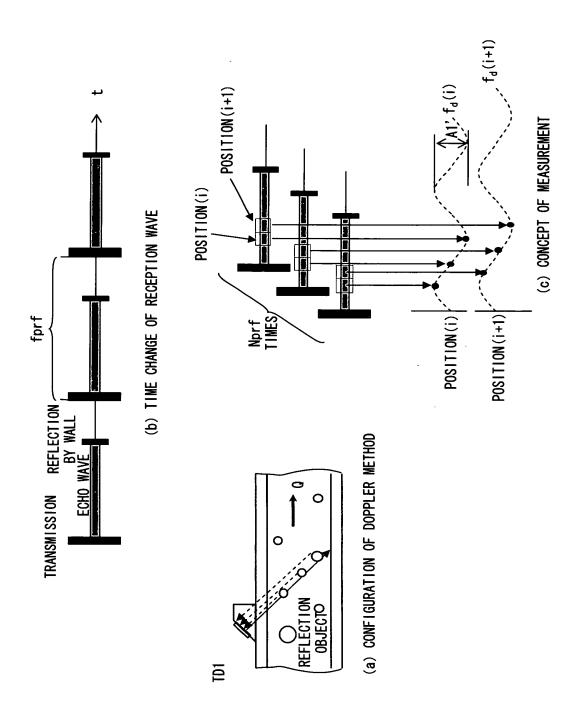
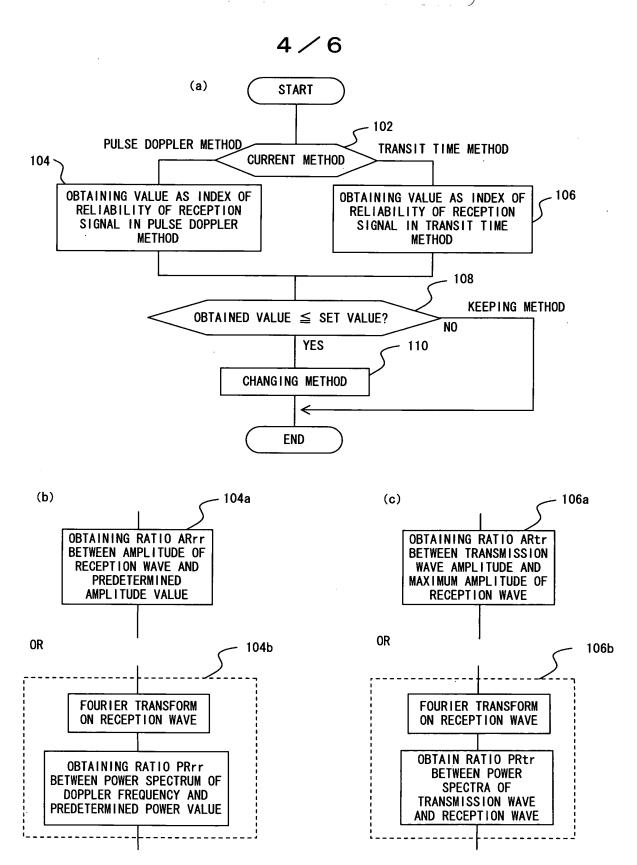
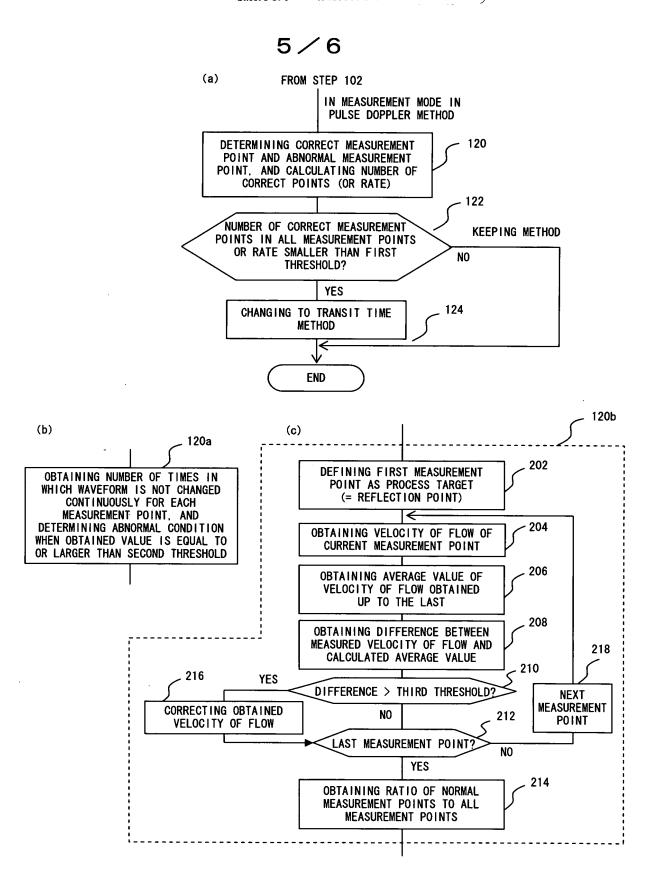


FIG. 3



F I G. 4



F I G. 5

SWITCHING PROCESS 302 DETERMINING CORRECT MEASUREMENT POINT AND ABNORMAL MEASUREMENT POINT, AND CALCULATING NUMBER OF CORRECT POINTS (OR RATE) 304 NUMBER OF CORRECT MEASUREMENT POINTS IN ALL NO 308 MEASUREMENT POINTS OR RATE SMALLER THAN FIRST THRESHOLD? YES CALCULATING SWITCH VALUE Vp OF TRANSIT TIME METHOD 306 Vp=ARtr·W1+PRtr·W2 WHERE RATIO ARtr = RATIO OF TRANSMISSION WAVE AMPLITUDE TO MAXIMUM AMPLITUDE OF RECEPTION WAVE RATIO PRtr = RATIO OF FREQUENCY POWER OF TRANSMISSION CHANGING TO TRANSIT WAVE TO RECEPTION WAVE TIME METHOD 310 CALCULATING SWITCH VALUE Vd IN PULSE DOPPLER METHOD Vd=ARrr·W3+PRrr·W4 WHERE RATIO ARrt = RATIO OF AMPLITUDE OF DOPPLER RECEPTION WAVE TO PREDETERMINED AMPLITUDE VALUE RATIO PRrr = RATIO OF POWER SPECTRUM OF DOPPLER FREQUENCY TO PREDETERMINED POWER VALUE 312 SELECTING WHICHEVER IS A LARGER VALUE Vx (x = p OR d)BETWEEN SWITCH VALUES VP AND VD IN TRANSIT TIME METHOD AND PULSE DOPPLER METHOD 314 Vx ≥ PREDETERMINED VALUE? YES 316 318 SWITCHING TO SELECTED METHOD

F I G. 6

NORMAL TERMINATION

ABNORMAL TERMINATION